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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/728,084 | 12/03/2003 | Pentti Juhani Eromaki | 4447-67437-01 | 7665 |
| 24197 | 7590 | 05/17/2006 | EXAMINER | |
| | | | MAKI, STEVEN D | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 1733 | |

DATE MAILED: 05/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|---|----------------------------|---|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/728,084 | EROMAKI, PENTTI JUHANI | |
| | Examiner Steven D. Maki | Art Unit 1733 | |
| <i>-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --</i> | | | |
| Period for Reply | | | |
| A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION. | | | |
| <ul style="list-style-type: none"> - Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication. - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication. - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b). | | | |
| Status | | | |
| <p>1)<input checked="" type="checkbox"/> Responsive to communication(s) filed on <u>03 March 2006</u>.</p> <p>2a)<input type="checkbox"/> This action is FINAL. 2b)<input checked="" type="checkbox"/> This action is non-final.</p> <p>3)<input type="checkbox"/> Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under <i>Ex parte Quayle</i>, 1935 C.D. 11, 453 O.G. 213.</p> | | | |
| Disposition of Claims | | | |
| <p>4)<input checked="" type="checkbox"/> Claim(s) <u>1-41</u> is/are pending in the application.</p> <p>4a) Of the above claim(s) _____ is/are withdrawn from consideration.</p> <p>5)<input type="checkbox"/> Claim(s) _____ is/are allowed.</p> <p>6)<input checked="" type="checkbox"/> Claim(s) <u>1-41</u> is/are rejected.</p> <p>7)<input type="checkbox"/> Claim(s) _____ is/are objected to.</p> <p>8)<input type="checkbox"/> Claim(s) _____ are subject to restriction and/or election requirement.</p> | | | |
| Application Papers | | | |
| <p>9)<input type="checkbox"/> The specification is objected to by the Examiner.</p> <p>10)<input type="checkbox"/> The drawing(s) filed on _____ is/are: a)<input type="checkbox"/> accepted or b)<input type="checkbox"/> objected to by the Examiner.</p> <p style="margin-left: 20px;">Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).</p> <p style="margin-left: 20px;">Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).</p> <p>11)<input type="checkbox"/> The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.</p> | | | |
| Priority under 35 U.S.C. § 119 | | | |
| <p>12)<input type="checkbox"/> Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).</p> <p>a)<input type="checkbox"/> All b)<input type="checkbox"/> Some * c)<input type="checkbox"/> None of:</p> <p style="margin-left: 20px;">1.<input type="checkbox"/> Certified copies of the priority documents have been received.</p> <p style="margin-left: 20px;">2.<input type="checkbox"/> Certified copies of the priority documents have been received in Application No. _____.</p> <p style="margin-left: 20px;">3.<input type="checkbox"/> Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).</p> | | | |
| <p>* See the attached detailed Office action for a list of the certified copies not received.</p> | | | |
| Attachment(s) | | | |
| <p>1)<input checked="" type="checkbox"/> Notice of References Cited (PTO-892)</p> <p>2)<input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)</p> <p>3)<input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.</p> | | <p>4)<input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.</p> <p>5)<input type="checkbox"/> Notice of Informal Patent Application (PTO-152)</p> <p>6)<input type="checkbox"/> Other: _____.</p> | |

1) The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "32" has been used to designate both the "inner head" and the "second sides". Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

As a related matter, the disclosure is objected to because of the following informalities: The specification describes "32" as being the "inner head" and the "second sides".

Appropriate correction is required.

2) The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3) Claims 1-41 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, the claimed association of the tire, the studs and the installation tool is ambiguous. Claim 1 is understood as requiring a combination of a tire *and* studs *and* an installation tool. However, the claimed association of these claimed components of claim 1 is ambiguous. Claim 1 recites "the bottom flange in the tread being deeper from the rolling surface and the top bowl being nearer to the rolling surface" (emphasis added). This description indicates that that the claimed combination requires the **studs have been installed in the tread** (studs are disposed in the recesses of the tread and the tire). Claim 1 also describes "combination for installing anti-slip studs" (emphasis added) and "installation tool by which said anti-slip studs are installed in said tread"

(emphasis added). This description indicates that the **studs are to be installed** in the tread (studs are separate from both the tread of the tire and the tool). Claim 1 also describes "said jaw fingers being in contact with at least two first side portions of the bottom flange of the anti-slip stud" (emphasis added). This description appears to indicate that the **studs are being installed** (studs are in contact with the fingers, but are not installed in the tread). What is the claimed location of the studs in claim 1? What is the claimed location of the fingers of the tool in claim 1?

In claims 38 and 39, it is unclear how many plunger pins are being claimed. In each of claims 38 and 39, it is suggested to change "pressing said anti-slip stud by a plunger pin" to --pressing said anti-slip stud by said plunger pin-- since each of claims 38 and 39 already recite "a plunger pin that is movable ..."

4) The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5) **Claims 1-6, 8-22 and 30-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pettersson (US 3,385,742) in view of at least one of Ostrovskis (US 2002/0050312) and Russia (RU 2,152,318).**

Pettersson discloses a method for making a studded tire comprising: providing a motor vehicle tire 10 (pneumatic tire) having a tread; forming holes 11 in the tread; providing studs wherein each stud comprises a bottom flange 13, a neck 15, a bowl 15 and a tip 16 (figure 1); providing an installation tool having "a number of fingers" such as

three fingers 17, 18, 19; and using the installation tool to install the studs in the holes wherein the fingers are inserted in the hole, the stud is moved through the bore 20 of a sleeve 25 using plunger 22 such that the stud is pressed against the shoulders of the fingers to force the fingers radially outward when the stud flange 13 is sliding along the fingers into its bottom position in the hole between the end portions of the fingers; maintaining the plunger in contact with the stud and simultaneously withdrawing the fingers from the hole so that the plunger prevents withdrawal of the stud from the hole. As shown in figures 3-5, the fingers have narrowing tip portions. Hence, Pettersson substantially discloses (1) the claimed combination of tire and studs and tool and (2) the claimed method of installing studs. Pettersson does not recite the stud having a bottom flange with *the claimed shape*.

Ostrovsksis discloses a stud 1 for a motor vehicle tire comprising a bottom flange 2, a neck 3, a bowl 4 and a tip 5. See figure 1. The cross-sectional shape of the root (bottom flange 2) is out of round. The out of round shape may for example be oval or rounded rectangle. The cross-sectional shape of the upper part (tip 5, bowl 4) is also out of round. The longitudinal axis of the out or round root (flange) and the longitudinal axis of the upper part enclose an angle of for example 65-115 degrees. Ostrovsksis teaches that the out of round bottom flange of the stud can be oriented in the tread such that tilting of the stud in the rubber under load conditions is reduced so as to reduce heating and aging of the tread rubber. Ostrovsksis also discloses orienting the out of round tip in the tread so as to shorten braking distance and reduce traction. For installation of the stud in a tread, Ostrovsksis teaches guiding the stud to the tread using

a pipe (tube) having a cross section corresponding to the cross section of the stud so that the stud can be seated in the tread at the proper angular position.

Russia discloses a tire studding device comprising a charging tube, guide tube 11, lips 14 (fingers) for widening a hole in the tread of the tire, a pusher 16 with drive to insert an anti-skid stud into the widened hole and a drive starter wherein the charging tube and guide tube 11 are provided with guide members for orientation of the antiskid stud. The section profile of the tubes (e.g. 11) meets the section profile of the anti-skid stud. See abstract and figures. The stud comprises a tip 5, body 1, and bottom flange 2. See figures 11 and 12. The stud may have a generally triangular cross-sectional shape (figure 11) or a generally rectangular cross sectional shape (figure 3). When installing a stud having a generally triangular cross section, Russia shows using three pushers 16 - one pusher for each side of the bottom flange. See figure 19.

As to claims 1, 16, 38 and 39, it would have been obvious to one of ordinary skill in the art to use "non-round" tire studs in Pettersson's process for installing studs in premade holes in a tire tread since (1) Ostrovskis, also disclosing a stud for a tire tread having a bottom flange, neck, top bowl and tip, suggests using **out of round cross-sectional shape (e.g. oval, rounded rectangle)** for the tip and bottom flange of a stud *to improve braking and traction of the tire and to prevent tilting of the stud to reduce heating and aging of the tread rubber and/or* (2) Russia teaches inserting "out of round" studs into premade holes in a tire tread *using an apparatus similar to that of Pettersson*. One of ordinary skill in the art would have had a reasonable expectation of success using Pettersson's stud installation tool to install out of round studs into

premade holes. Pettersson and Ostrovskis both guide a stud through a tube toward the tread. Pettersson and Russia both guide a stud through a tube toward a tread with Russia additionally teaching installing out of round studs into premade holes using a stud installation tool similar to that of Pettersson.

As to claim 1: With respect to the number of first side portions and second side portions, the out of round cross-sectional shape (e.g. oval stud) suggested by Ostrovskis has two first side portions at a short distance from the stud center and two second side portions. Alternatively, the out of round cross-sectional shape (e.g. generally rectangular stud) suggested by Russia has two first side portions at a short distance from the stud center and two second side portions. Furthermore, it would have been obvious to one of ordinary skill in the art to use four fingers in Pettersson's stud installation tool in view of (1) Pettersson's teaching to use "**a number of fingers**" such as "three radially movable jaw fingers 17, 18, 19" in order to expand the wall of the hole into which the stud is inserted and optionally (2) Russia's suggestion to associate a pusher 16 / lip 14 for *each side* of an out of round stud (see figures 15-19). With respect to the fingers being in contact with at least two first side portions as set forth in the last four lines of claim 1, Pettersson teaches pressing the bottom flange of the stud against the fingers so that the fingers expand. The use of four fingers instead of three fingers is amply suggested by Pettersson's teaching to use a number of fingers such as three. Pettersson is not limited to using only three fingers. One of ordinary skill in the art would readily appreciate from Pettersson's disclosure to use fingers to expand the hole for the stud that the use of more than three fingers would facilitate expansion of the

hole for the stud. The subject matter of the number of jaw fingers being equal to twice the number of second side portions of the stud and two jaw fingers being in contact with two first side portions of the stud is suggested by Pettersson's teaching to contact the bottom flange of a stud with a number of fingers and the out of round cross-sectional shaped bottom flange of the stud suggested by Ostrovskis and/or Russia. This is especially true in view of the teaching in Russia to associate a pusher 16 / lip 14 for *each side* of an out of round stud as suggested by figures 15-19.

As to claim 16: With respect to the number of first side portions and edge portions, the out of round cross-sectional shape (e.g. rounded rectangle) suggested by Ostrovskis has two first side portions at a short distance from the stud center and two edge portions. Alternatively, the out of round cross-sectional shape (e.g. generally triangular) suggested by Ostrovskis has three first side portions at a short distance from the stud center and three edge portions. Also, the out of round stud (e.g. rounded rectangle) suggested by Ostrovskis has two first side portions at a short distance from the stud center and four edge portions. Furthermore, it would have been obvious to one of ordinary skill in the art to use a number of fingers in Pettersson's stud installation tool equal to the number of edge portions in view of (1) Pettersson's teaching to use "**a number of fingers**" such as "three radially movable jaw fingers 17, 18, 19" in order to expand the wall of the hole into which the stud is inserted and optionally (2) Russia's suggestion to use three pushers 16 / lips 14 for a generally triangular stud having three sides and three edge portions - i.e. associate a pusher 16 / lip 14 for each side of an out of round stud (see figures 15-19). With respect to the fingers being in contact with at

least two first side portions as set forth in the last four lines of claim 16, Pettersson teaches pressing the bottom flange of the stud against the fingers so that the fingers expand.

As to claims 38 and 39: With respect to oval or polygonal bottom flange, note the suggestion from Ostrovskis and/or Russia to use an out of round cross sectional shape; it being noted that Ostrovskis teaches using an out of round shape with straight sides (rounded rectangle) as an alternative to an out of round shape with only curved sides (oval). As to claim 38, it would have been obvious to one of ordinary skill in the art to **turn** Pettersson's stud installation tool such that the fingers are turned as claimed since (1) Pettersson teaches moving the stud through the *guide bore* of a sleeve 25 and using the fingers to correctly position the stud and (2) Ostrovskis and/or Russia suggest turning a *guide tube* through which out of round studs are moved so that the out of round studs can be disposed in the tread of a tire at a desired orientation. The hard tip in the stud of each of Pettersson, Ostrovskis and Russia is in a constant position with respect to the bottom flange. As to using "cermet" for the hard tip, it would have been obvious to use cermet (e.g. sintered carbide) for the hard tip of the stud as claimed since it is taken as well known / conventional in the tire stud art to use "cermet" (e.g. carbide) for the tip of a tire stud (the cermet material secured in the stud by extending the cermet material a desired length through the body of the stud) so that the remainder of the tire stud can be made of a different material. The claimed non round shape of the tip is suggested by Ostrovskis and/or Russia. As to claim 39, it would have been obvious to one of ordinary skill in the art to use Pettersson's stud installation tool to

install two types of studs as claimed in view of Ostrovskis's teaching that different types of studs may be installed in the tire to obtain optimal force absorption in both straight ahead driving and curved travel to the left or the right.

Turning of Pettersson's stud installation tool results in both the guide bore of the sleeve and the jaw fingers being turned. Ostrovskis and/or Russia suggests turning the tube having a guide bore to orient an out of round stud. Also, none of the claims requires orientation of the studs using jaw fingers without the need for a guide bore or injection pipe.

As to claim 2 (four fingers), see comments on claim 1.

As to claims 3 and 4, Ostrovskis suggests an oval shaped bottom flange.

As to claim 5, it would have been obvious to use hard cermet (e.g. sintered carbide) for the tip of the stud as claimed since it is taken as well known / conventional in the tire stud art to use "cermet" (e.g. carbide) for the tip of a tire stud (the cermet material secured in the stud by extending the cermet material a desired length through the body of the stud) so that the remainder of the tire stud can be made of a different material. The claimed non round shape of the tip is suggested by Ostrovskis and/or Russia.

As to claim 6, Ostrovskis suggests orienting a non-round tip at an angle to the non-round flange.

As to claim 8, Pettersson suggests a circular premade hole. Russia also suggests using a premade hole.

As to claims 9-14 and 40, the claimed fingers read on Pettersson's fingers.

As to claim 15, see shape of bottom surface of the bottom flange in figures 1, 3, 4 of Pettersson. In any event: it would have been obvious to provide the bottom flange of the stud with a bevel as claimed since it is taken as well known / conventional per se in the tire stud art to provide the bottom flange of a tire stud with a bevel in order to facilitate insertion.

As to claims 17-22, note the non-round cross-sectional shape for the bottom flange and the non-round cross-sectional shape for the tip suggested by Ostrovskis and/or Russia. As to claim 21, note comments on claim 5.

As to claim 30, Pettersson suggests a circular premade hole. Russia also suggests using a premade hole.

As to claims 31-36 and 41, the claimed fingers read on Pettersson's fingers.

As to claim 37, see shape of bottom surface of bottom flange in figures 1, 3, 4 of Pettersson. In any event: it would have been obvious to provide the flange of the stud with a bevel as claimed since it is taken as well known / conventional per se in the tire stud art to provide the bottom flange of the tire stud with a bevel in order to facilitate insertion.

6) Claims 7-8 and 29-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pettersson in view of at least one of Ostrovskis and Russia as applied above and further in view of Eromaki (US 6374886).

As to claims 7-8 and 29-30, it would have been obvious to provide the premade hole with a bottom expansion / at least partly circular expansion as claimed in view of the suggestion from Eromaki, also directed to the tire stud art, to provide an at least

partly circular premade hole in which a non-round stud is inserted with a bottom expansion.

7) Claims 23-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pettersson in view of at least one of Ostrovskis and Russia as applied above and further in view of Finland 9/65 or Japan 407 (JP 56-146407).

It would have been obvious to provide the tire stud with the claimed features as set forth in claims 23-28 in view of (1) the suggestion from Ostrovskis and/or Russia to use a non-round shape for the tip of the tire stud and (2) the specific non-round shape for the upper portion of a tire stud shown by Finland 9/65 or Japan 407.

Remarks

8) Applicant's arguments with respect to claims 1-41 have been considered but are moot in view of the new ground(s) of rejection.

Applicant's arguments filed 3-3-06 have been fully considered but they are not persuasive.

Applicant's arguments regarding Pettersson and Ostrovskis are not persuasive since (1) turning of Pettersson's stud installation tool results in both the guide bore of the sleeve and the jaw fingers being turned and (2) Ostrovskis suggests turning the injection pipe having a guide bore to orient an out of round stud. Also, none of the claims requires orientation of the studs using jaw fingers without the need for a guide bore or injection pipe.

Applicant is requested to provide an English translation of Russia 2152318 C1 (cited by applicant) if available.

Art Unit: 1733

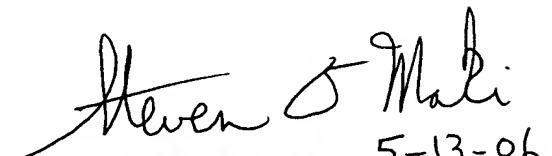
9) No claim is allowed.

10) Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven D. Maki whose telephone number is (571) 272-1221. The examiner can normally be reached on Mon. - Fri. 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Steven D. Maki
May 13, 2006


5-13-06
STEVEN D. MAKI
PRIMARY EXAMINER